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## THE HISTORY AND DERIVATION OF THE WORD 'FUNCTION' AS A SYSTEMATIC TERM IN PSYCHOLOGY<sup>1</sup>

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By K. M. DALLENBACH

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The New English Dictionary gives six current meanings of the word *Function*. Five of these may be traced back nearly four hundred years; the mathematical usage is of more recent date. In its etymological sense, and in the senses of mere activity, of a specialized activity, of a particular office, and of a ceremony, the word may be found in the literature of the 16th century.

We are here interested only in one of these meanings, that of a special kind of activity. *Function* in this sense is employed in three different ways; for the activity of an organ (this we shall call, for the sake of brevity, the physiological use); for the activity of the intellectual and moral powers or faculties (this we shall call the psychological use); and for the activity of things in general (this we shall call the general use). It is, again, only the broad psychological use that concerns us; the more narrow and particular meanings—in contemporary psychology the word is employed in several distinguishable senses<sup>2</sup>—will be thrown together under this single head.

It is our purpose to discover when the word first appears in English with a psychological meaning, and, if possible, whence it is derived. The New English Dictionary gives four

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<sup>1</sup> From the Psychological Seminary of Cornell University.

<sup>2</sup> C. A. Ruckmich, this JOURNAL, XXIV, 1913, 99-123.

references. The first is to Shakespeare (1604): "As her appetite shall play the God with his weake function."<sup>3</sup> The second is to Milton (1671): "Nature within me seems in all her functions weary of herself." The third is to Coleridge (1809-10): "The functions of comparison, judgment, and interpretation." The last is to Farrar (1868): "The first function of the conscience is to warn." In the quotations from Shakespeare and Milton, however, the import seems ambiguous, and we cannot be sure that the passages anticipate our present-day usage.

We began our search with an examination of the works of the greater English associationists. Thomas Hobbes does not use the word in his "Elements of Philosophy" (1655).<sup>4</sup> An examination of the complete works,<sup>5</sup> letters, essays, tracts, and treatises of John Locke (1632-1704) shows that power and faculty, used synonymously, are favorite words with him; but he, like Hobbes, does not use the word function even in contexts where we might expect such use if the word were current in the philosophical discourse of the time. Locke, moreover, had had training in medicine,<sup>6</sup> so that in all probability the word was as rarely used in contemporary physiology. We failed also to find it in the works of Berkeley<sup>7</sup> (1685-1753), either in a psychological sense, or even in the sense of a public or religious ceremony. Hume's "Treatise on Human Nature" (1739) and "Inquiries Concerning the Human Understanding" (1777) were examined; but he, too, seems not to have employed the word upon a single occasion. Hartley, in his "Observations on Man" (1748), uses the term twenty times. In no case, however, does he employ 'function' in the psychological sense, unless the once-used expression "body and mind depend on each other for their functions"<sup>8</sup> be so construed. It is very unlikely that Hartley intends this implication; for, in other cases, the word is used either in a common-sense or in a physiological connection. He speaks, for example, of the structure and functions of the several organs, or of the parts; of the ordinary functions and actions of life;

<sup>3</sup> *Othello*, Act ii, Scene 3, line 344. The reference given by Bradley is to Scene 2.

<sup>4</sup> *The English Works of Thomas Hobbes*. Translation from the Latin by W. Molesworth, 1839, vol. i.

<sup>5</sup> *Works of John Locke*, 4th ed., 3 vols., 1740.

<sup>6</sup> A. C. Fraser, *Locke*, 1890, 19.

<sup>7</sup> A. C. Fraser, *Works of George Berkeley*, 4 vols., 1871.

<sup>8</sup> D. Hartley, *Observations on Man*, i, 30.

and of the clergy as not "discharging their functions" and "not pretending to any function or authority."

With Brown (1778-1820) the word comes into more general use. In his "Physiology of the Mind" it is found three times. Twice the term has a physiological,<sup>9</sup> but once, certainly, a definitely psychological application. "There is a PHYSIOLOGY OF THE MIND, then, as there is a *physiology of the body*; a science which examines the phenomena of our spiritual part simply as phenomena, and, from the order of their succession, or other circumstances of analogy, arranges them in classes under certain general names; as, in the physiology of our corporeal part, we consider the phenomena of a different kind which the body exhibits, and reduce all diversities of these under the names of a few general FUNCTIONS."<sup>11</sup> In the "Lectures on the Philosophy of the Human Mind"<sup>12</sup> the term is found in numerous passages, and is used variously in both senses. As applied to mental phenomena, it has come to be synonymous with the older terms, power and faculty. "The innumerable changes, corporeal and mental, we reduce, by generalizing, to a few classes; and we speak, in reference to the mind, of its faculties or functions of perception, memory, reason, as we speak, in reference to the body, of its functions of respiration, circulation, nutrition."<sup>13</sup> "The definition of the supposed power [power of conception] is sufficiently intelligible; but is there reason to add the power thus defined, to our other mental functions, as a distinct and peculiar faculty."<sup>14</sup>

This usage, as we have shown, could not have derived from the direct line of English psychologists. We have gone, therefore, to Brown's life and the references that he gives incidentally in the course of his lectures, to discover, if possible, its origin. From his biographies and his references<sup>15</sup> we find that he was influenced principally by Malebranche, Hume, Smith, Reid, Paley, Rush, Darwin, Condillac, de

<sup>9</sup> *Op. cit.*, vol. i, 7, 110, 42, vol. ii, 450, 452. The other instances of his use of the word may be found on pages 7, 18, 30, 42, 46, 52, 54, 110, 109, 266, 447, in vol. i, and 219, 450, and 452 in vol. ii.

<sup>10</sup> *Physiology of the Mind*, 1820, 51.

<sup>11</sup> *Op. cit.*, 2. Capitals and italics in original.

<sup>12</sup> 3 vols., edited posthumously by J. Stewart and E. Milroy, 1822.

<sup>13</sup> *Op. cit.*, vol. i, 14.

<sup>14</sup> *Op. cit.*, vol. ii, 104.

<sup>15</sup> D. Welsh, *Account of the Life and Writings of Thomas Brown, M. D.*, 1825; D. Welsh, *Memoir of Dr. Brown*, in *Brown's Philosophy of the Human Mind*, vol. i, 1851; J. McCosh, *Scottish Philosophy*, 1874, 317-337.

Tracy, Gregory, and Dugald Stewart. Other names and references are to be found in his lectures, but the above are, unfortunately, the only sources at our disposal.

In the English translation of the "Recherches de la vérité" (1674) of Malebranche the word function appears only twice, and on both occasions in connection with physiological processes.<sup>16</sup> Hume has already been considered; he does not use the word in any sense. Adam Smith (1723-1790) does not use the word in his "Theory of Moral Sentiments,"<sup>17</sup> the only one of his works examined. The term is used three times in Reid's (1710-1796) "Inquiry into the Human Mind," but the applications again are in all cases physiological.<sup>18</sup> Benjamin Rush (1745-1813), the American physician, uses the word once only in his best known work, "Diseases of the Mind," where he speaks of function in connection with the will; suggestion from a physiological context rather than systematic psychological implication seems to be here responsible.<sup>19</sup> Rush gives no references, and we were unable to discover his intellectual antecedents. Brown read Erasmus Darwin's (1731-1802) "Zoonomia,"<sup>20</sup> and wrote a criticism of it.<sup>21</sup> Before publishing the criticism, however, at the advice of Dugald Stewart, he submitted it to Darwin, and a long correspondence sprang up. Darwin's influence on Brown could not have occasioned the use of the word 'function' in the psychological sense; for, in the four volumes of "Zoonomia," Darwin uses the word but twice, and then only in the physiological sense.<sup>22</sup> The word is not found in Paley's (1743-1805) "Moral Philosophy,"<sup>23</sup> nor in the three volumes of the works of Condillac (1715-1780) which were examined.<sup>24</sup> It is used once by Destutt de Tracy in the "Éléments d'idéologie," and then in the sense of office or duty.<sup>25</sup>

Stewart (1753-1828) was Brown's teacher and later his colleague and close personal friend; but it can hardly be

<sup>16</sup> N. Malebranche, trans. by T. Taylor, *Treatise Concerning the Search after Truth*, 1694, 33, 121.

<sup>17</sup> Published 1759; 10th ed., 2 vols., 1804.

<sup>18</sup> Published 1764; 3rd ed. 1769, 187, 219.

<sup>19</sup> *Medical Inquiries and Observations upon the Diseases of the Mind*, 1812; 3rd ed. 1827, 261.

<sup>20</sup> Published in 1794. 3rd ed., 1801.

<sup>21</sup> *Observation on Dr. Darwin's Zoonomia*, 1798.

<sup>22</sup> *Op. cit.*, vol. i, 16; vol. iv, 348.

<sup>23</sup> Published in 1785.

<sup>24</sup> *Oeuvres de Condillac*, 23 vols., 1798. The volumes examined were: vol. i, *Sur l'origine des connaissances humaines*; vol. ii, *Traité des systèmes*; vol. iii, *Traité des sensations*.

<sup>25</sup> Published in 1801. Translated, 1817, xx.

through him that Brown comes to speak of mental functions; for Stewart's single use of the term in three volumes of the "Elements of the Philosophy of the Human Mind" has reference to the body.<sup>26</sup> On the same page on which this quotation appears, however, Stewart quotes a long passage from the English translation (1801) of the introduction to Cuvier's "Leçons d'anatomie comparée"<sup>27</sup> and in this quotation 'function' occurs twice. But in the work of Cuvier published before Brown's death, 'function,' although used freely, is applied only to physiological processes, so that it could not have been Cuvier's influence which led Brown to his own use of the term. Our examination of Cuvier, however, gave us accidentally a hint as to the origin of Brown's usage. Cuvier, we found, was much impressed<sup>28</sup> by the doctrines of the new phrenology which were being disseminated at this time; and, as we shall attempt to show, it is *phrenology*, not by way of Cuvier, but much more directly, that was responsible for Brown's innovation.

Gall gave his first lectures upon phrenology at Vienna in 1796. They proved to be very popular, and he soon gained a following of students, foremost among whom was Spurzheim. Through the influence of the church Gall was forced to flee from Vienna in 1805 and, in company with Spurzheim, began a tour of Germany, lecturing and spreading his doctrines as he went. His expositions were popular and expressive, and he found many adherents. Spurzheim continued lecturing after his break with Gall in 1813, and traveled extensively through Germany, Switzerland, England, Scotland, and Ireland.<sup>29</sup> By his lectures and in other ways phrenological doctrines were widely disseminated; and though

<sup>26</sup> Dugald Stewart, *Elements of the Philosophy of the Human Mind*, vol. i, 1792; 2nd ed., 1802; vol. ii, 1813; 3rd ed., 1821; vol. iii, 1827. The passage referred to is in vol. ii, 3rd ed., 414.

<sup>27</sup> 10 vols. Edited posthumously by Dumeril and Duvernoy, 1835-45. (Only the first three volumes were examined.)

<sup>28</sup> In editing Cuvier's "Leçons," Dumeril refers by footnotes (vol. iii, 15, 70, 71, 72, 79, 117) to Cuvier's "Rapport à la classe des sciences physiques sur un mémoire de MM. Gall et Spurzheim, relatif à l'anatomie du cerveau" (1808). Cuvier's "Rapport historique sur les progrès des sciences naturelles depuis 1789 et sur leur état actuel" (1828) mentions Gall (p. 196) in connection with the advancement in physiology, and under the topic "The functions of the brain" (p. 232) calls particular attention to Gall. Henri Dehérain says in his "Catalogue des Manuscrits du Cuvier," that Cuvier was acquainted with Gall and Gall's doctrines as early as 1802.

<sup>29</sup> Articles on Gall and Spurzheim in *Encyclopedia Britannica*, 11th ed., 1910-11. See also Thomas Sewall, *An examination of Phrenology*, 1837, Lecture 1.

Brown makes no direct reference to phrenology in his writings, he was undoubtedly conversant with its doctrines. He was not only a physician and a trained physiologist himself, but his closest friend, James Gregory (1750-1821), was the most eminent physician of his time in Scotland.<sup>30</sup> Association with such a man would have kept him abreast of current physiological work and theory. We have, however, further evidence that phrenology was discussed in Edinburgh at the time. In 1815, Dr. Wm. E. Leach writes to Thomas Foster, who gave the name 'phrenology' to the new system and was then writing articles upon it: "Certain anatomists in London, and one in Edinburgh, have absolutely denied the truth of Dr. Spurzheim's observations on the structure of the brain and have pronounced them to be fanciful."<sup>31</sup> Furthermore, in 1815, an article "On the system of craniology of F. J. Gall and K. Spurzheim" appeared in the *Edinburgh Review*, a magazine to which Brown contributed. The article was denounced and laughed at for its seeming absurdities; but after Spurzheim's visit to Edinburgh, where he delivered a series of lectures on phrenology in refutation of his critics, the subject was more seriously considered. It gained many adherents and made many converts, foremost among whom were George and Andrew Combe. George Combe soon became active in the propagation of phrenological doctrine. His first article on the subject was published in 1817 in *Scot's Magazine*, and his first book in 1819.<sup>32</sup> In 1820 he helped to establish the Phrenological Society of Edinburgh.

In the phrenological works, as in Brown's "Philosophy of the Human Mind," functions of mind appear along with functions of body. In his first article<sup>33</sup> (1798), Gall speaks only of functions of the brain, the cortex, the nerves, and the different organs, and never of mental or intellectual functions. In his later writings, and in those written in collaboration with Spurzheim,<sup>34</sup> such expressions as "fonctions de l'âme," "fonctions intellectuelles," "fonctions de l'esprit," "fonctions de sens," are nearly as frequent as expressions of physiological

<sup>30</sup> David Welsh, *op. cit.*; *Encyclopedia Britannica*, locc. citt.

<sup>31</sup> *Pamphleteer*, v., 1815, 220ff.

<sup>32</sup> G. Combe, *Essays in Phrenology*, 1819.

<sup>33</sup> F. G. Gall, Schreiben über seinen bereits geendigten Prodrömus über die Verrichtungen des Gehirns der Menschen und der Thiere, *Wiand's Deutscher Merkur*, vol. iv., 1798, 311-335.

<sup>34</sup> Gall, *Introduction au cours de physiologie du cerveau*, 1808; *Recherches sur le système nerveux en général, et sur celui du cerveau en particulier*; F. J. Gall and J. C. Spurzheim, *Mémoire présenté à l'Institut de France le 14 Mars 1808*, 1809; *Anatomie et physiologie du système nerveux*, 1810, 1812.

significance. In the "Mémoire présenté à l'Institut de France" (1808), for example, we find the word 64 times, and 10 refer to mind. Spurzheim's independent writings show a similarly extended use. In his work on insanity,<sup>35</sup> which appeared in English in 1817, the word appears 152 times, and 49 have a direct psychological reference. These writers make function synonymous with the older terms power and faculty, writing at times "fonctions ou facultés."<sup>36</sup> Spurzheim characterized as 'particular' functions, combativeness, destructiveness, acquisitiveness, love of approbation, and the like.<sup>37</sup> Later writers upon phrenology continue the usage.<sup>38</sup>

It seems now sufficiently evident that Brown's use of the term function as applied to mind is a direct result of phrenological influences; for there can be no doubt either that such use was current in phrenology as nowhere else, or that circumstantial evidence shows Brown's interest in and familiarity with phrenology, in spite of his own lack of reference. We shall now attempt to prove that *there exists a remarkably constant relation between emphasis upon the importance of phrenological and physiological theory and the frequency with which English psychologists speak of mental functions.*

Sir William Hamilton (1788-1856) is careful to define the term. "With us," he says, "the word function . . . means, not the exercise, but the specific character of a power."<sup>39</sup> Hamilton uses the word frequently with reference to physiological structures, but, so far as we have found,<sup>40</sup> never with reference to mind, save in two instances where

<sup>35</sup> *Observations on the Deranged Manifestations of the Mind, or Insanity*, 1817.

<sup>36</sup> *Mémoire*, 229.

<sup>37</sup> *Lancet*, vii, viii, 1825.

<sup>38</sup> T. Sewall, *An Examination of Phrenology*, 1837, 57; H. Holland, *Medical Notes and Reflections*, 1839, 136, 141, 142, 146, 150, 151, 194, 196, 198, 204, 271, 274, 310, 312, 371, 373; S. G. Morton, *Am. J. of Science and Arts*, xxxviii, 1840, 356; O. S. Fowler, *Practical Phrenology*, 1850, 6, 7, 9; O. S. and L. N. Fowler, *Phrenology Proved, Illustrated, and Applied*, 1850, 8, 10ff.

<sup>39</sup> *Lectures on Metaphysics and Logic*, Edited by H. L. Mansel and J. Veitch, 1882, 180.

<sup>40</sup> We have examined John Veitch, *Memoirs of Sir Wm. Hamilton*, 1869; W. Hamilton, *Practical Consequences of the Theory of the Functions of the Brain of Dr. Gall*, 1826, 1827; Correspondence with George Combe, *Phrenological Journal*, iv, 1827, 377-407, v, 1828, 1-82; Physiological Researches in Relation to Phrenology, *Phrenological Journal*, v, 404-419; an article in Dr. Monro's *Anatomy of the Brain*, 1831, 4-8; *Medical Times*, xii, 1845, 177, 371 (a number of these articles may be found in vol. i. of Mansel and Veitch's edition of Hamilton's works); *Lectures on Metaphysics and Logic*.



he is discussing the systems of others. The one instance occurs in a discussion of phrenology;<sup>41</sup> the other in a discussion of Gassendi's philosophy.<sup>42</sup> Hamilton, to be sure, was a student of medicine, and retained his interest in physiology throughout his life; but far from accepting the tenets of phrenology, he was one of its most active opponents; so that the absence of the term 'mental function' in his writings confirms rather than opposes our thesis.

James Mill (1773-1836) seems serenely unconscious of the phrenological movement. In his "Analysis of the Human Mind"<sup>43</sup> he neither mentions Gall nor refers to phrenology. He does not consider the physiology of the nervous system, and with one exception makes no use of the word 'function.' On this occasion it is used in the sense defined by Hamilton, that of employment or office.<sup>44</sup>

In the writings of John Stuart Mill (1806-1873) the term appears infrequently, and usually with the sense of office, or with a physiological reference.<sup>45</sup> In three cases only does it refer to mind, and in all three it appears merely to be repudiated or denied in a discussion of another system (twice in that of Comte's new phrenology).<sup>46</sup>

August Comte (1798-1857), as we should expect from his well known phrenological leanings, often uses such expressions as moral and intellectual, affective, and phrenological functions.<sup>47</sup>

Appreciation of phrenological doctrine is also primarily responsible for the term function in the works of G. H. Lewes

<sup>41</sup> *Lectures on Metaphysics and Logic*, vol. i, 406, 411.

<sup>42</sup> *Op. cit.*, vol. ii, 202. Unfortunately, we were unable to obtain any of the original works of Pierre Gassendi (1592-1655), and are therefore unable to state definitely whether this use is Gassendi's, or whether it is Hamilton's. From the fact that the word does not appear in the "Three Discussions on Happiness, Virtue, and Liberty" (translated by Bernier, 1699), the only work of Gassendi's available, we incline to think that the use is Hamilton's.

<sup>43</sup> Edited by J. S. Mill with illustrative and critical notes by A. Bain, A. Findlater, and G. Grote, 1878.

<sup>44</sup> *Ib.*, vol. ii, 173.

<sup>45</sup> We examined *Sir William Hamilton's Philosophy*, 1865; *Auguste Comte and Positivism*, 1865; the editorial notes in the edition of James Mill's Works, 1878; the review of Bain's psychology, *Edinburgh Review*, ccxxiv, 1859, 287-321. Examples of Mill's use may be found in *Sir William Hamilton's Philosophy*, 151, 365; *August Comte and Positivism*, footnote 82, pp. 63, 65, 68, 168.

<sup>46</sup> *August Comte and Positivism*, 63, 65, 68; *Works of J. S. Mill*, vol. i, 394.

<sup>47</sup> See, e. g., *Cours de philosophie positive*, vol. iii, 764, 765, 766, 789, 795, and 799; or see H. Martineau, *The Positive Philosophy of August Comte*, 1856, 381, 382, and 387f.

(1817-1878). While he acknowledges that Gall's localization of the organs of the particular functions was defective and that his anatomical data were inaccurate, he nevertheless maintains that Gall's hypothesis was scientific in character.<sup>48</sup> In his introduction to "Comte's Philosophy of the Sciences" he acknowledges his debt to Comte. Comte's influence, he says, "has been with me, surviving all changes of opinion, and modifying my whole mental history."<sup>49</sup> Lewes defines psychology as "the analysis and classification of the *sentient functions and faculties* revealed to observation and induction."<sup>50</sup> He draws for the first time a distinction between function and faculty. "By faculty is commonly understood the power or aptitude of an agent to perform a certain action or class of actions. It is thus synonymous with function, which means the activity of an organ, the uses of the instrument. I propose to detach faculty from this general signification, limiting it to the action or class of actions into which a function may be diversified by the education of experience. That is to say, let function stand for the *native* endowment of the organ, and faculty for its acquired variation of activity."<sup>51</sup> This very distinction, however, permits Lewes to mingle more inextricably than ever functions of mind, mental functions, and physiological functions. One would not speak readily, perhaps, of faculties of body or of bodily organs; but Lewes finds no difficulty in writing: "Instincts are functions. Emotions are functions. Sensation and perception are functions. Logical combinations are functions. Some functions are simple, others compound; that is to say, some are performed by single organs, as vision by the eye; others by groups of organs, as instincts and emotions."<sup>52</sup> "The mental functions are functions of the individual organism, the product, mind, is more than an individual product."<sup>53</sup> "To regard mind as a function of the organism, and yet suppose that some mental functions had no organic conditions, was a strange incongruity."<sup>54</sup>

Herbert Spencer (1820-1903) uses the word function very frequently. With regard to his usage he says: "In tracing out the genesis of nervous structures, a good deal has been implied respecting the genesis of accompanying functions.

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<sup>48</sup> *Comte's Philosophy of the Sciences*, 1853, 77.

<sup>49</sup> P. 2.

<sup>50</sup> G. H. Lewes, *Problems of Life and Mind*, 1879, Problem I, 6.

<sup>51</sup> *Op. cit.*, 27.

<sup>52</sup> *Loc. cit.*

<sup>53</sup> *Op. cit.*, 160.

<sup>54</sup> *Op. cit.*, 57.

. . . Throughout the foregoing argument, functions, when referred to, have been expressed in physiological language."<sup>55</sup> Spencer prefers to speak of activities or of faculties in connection with mind, and consistently refuses to use the term mental function. As is well known, he denies the doctrines of phrenology.<sup>56</sup>

In the works of Alexander Bain (1818-1904) the word 'function,' while not admittedly used in a systematic sense, as by Lewes, is nevertheless actually so employed. In the "Senses and the Intellect"<sup>57</sup> and in the "Emotions and the Will,"<sup>58</sup> besides using the word in the physiological sense, he frequently employs such expressions as "the thinking function of mind,"<sup>59</sup> "the most complicated of the mental functions, namely those related to Intelligence,"<sup>60</sup> "belief a voluntary function?"<sup>61</sup> In his "Mental Science" (1868) he ordinarily uses the word in the physiological sense, but we find instances of psychological usage: "The functions of Intellect, Intelligence, or Thought, are known by such names as Memory, Judgment, Abstraction, Reason, Imagination, . . . The real subdivisions of the intellectual functions . . . are (1) consciousness of *Difference*, (2) consciousness of *Agreement*, and (3) *Retentiveness*. Every properly intellectual function involves one or more of these attributes and nothing else."<sup>62</sup> Similar expressions are common in his "Logic" (1870).<sup>63</sup> In his critical notes in J. S. Mill's edition of James Mill's "Analysis of the Human Mind," he continually uses the term, and, with a single exception, in the psychological sense.<sup>64</sup> Bain was confessedly impressed and interested by phrenology. He tells us in his autobiography of controversial discussions of phrenology in which he took part in the Mechanics' Mutual Instruction Class which he joined at 17. Combe's "Constitution of Man," he says, "had a great influence at that time; and I think we went cordially along with it."<sup>65</sup> That his interest did not diminish in the following years, we are assured by his friendship for the

<sup>55</sup> *Principles of Psychology*, 1890, vol. i, 559.

<sup>56</sup> *Op. cit.*, 572ff.

<sup>57</sup> Published in 1855.

<sup>58</sup> Published in 1859.

<sup>59</sup> *Senses and the Intellect*, 1888, 321.

<sup>60</sup> *Op. cit.*, 45.

<sup>61</sup> *Emotions and the Will*, 1859, 604.

<sup>62</sup> *Mental Science*, 82.

<sup>63</sup> Edition of 1895, vol. i, 5, 8; vol. ii, 280.

<sup>64</sup> Vol. i, footnote, pp. 55-56, footnote, p. 228, footnote, p. 314; vol. ii, footnote, p. 181.

<sup>65</sup> Page 28.

phrenologist James Straton and interest in his measurements of heads. Bain wrote a number of articles appreciative of phrenology, for example, "Phrenology and Psychology,"<sup>66</sup> "The Propensities According to Phrenology Examined,"<sup>67</sup> "The Sentiments According to Phrenology Examined,"<sup>68</sup> "The Intellectual Faculties According to Phrenology Examined,"<sup>69</sup> "On the Study of Character, Including an Estimate of Phrenology,"<sup>70</sup> and the references in his writings<sup>71</sup> give further evidence of his regard for its doctrines.

Bain brings us to the time of William James (1843-1910) and to present-day usage, an account of which is given by C. A. Ruckmich in an article on "Use of the Term 'Function' in English Textbooks of Psychology."<sup>72</sup> James differentiates sharply between the structural and the functional aspects of mind.<sup>73</sup> It is under his influence that much of our modern 'function psychology' has arisen. James' sources are many, and the influences which bore upon him are difficult to evaluate. We know, however, that he studied and taught physiology for a number of years before he turned definitely to psychology; and phrenology and physiology in relation to consciousness come in for extended treatment in his "Principles." James criticizes phrenology, to be sure. "Modern science," he says, "conceives of the matter in a very different way."<sup>74</sup> "Large faculties and large 'bumps' might fail to coexist; . . . the scheme of Gall was so fast as hardly to admit of accurate determination at all . . . the whole analysis of the faculties was vague and erroneous from a psychologic point of view."<sup>75</sup> But, "there seems no doubt that Phrenology . . . may still be, in the hands of intelligent practitioners, a useful help in the art of reading character."<sup>76</sup> Compare with the last sentence, for example, Bain's statement that "the proper view to take of Phrenology is to regard it as a science of Character, accompanied with a theory of external indications."<sup>77</sup> Hodgson and Lotze, to

<sup>66</sup> *Fraser's Magazine*, May, 1860.

<sup>67</sup> *Op. cit.*, Sept., 1860.

<sup>68</sup> *Op. cit.*, Nov., 1860; Feb., 1861.

<sup>69</sup> *Op. cit.*, June, 1861.

<sup>70</sup> Published in 1861.

<sup>71</sup> *Mental Science*, 98; *Logic*, 287.

<sup>72</sup> *Loc. cit.*

<sup>73</sup> W. James, *Mind*, ix, 1884, 18f.; *The Principles of Psychology*, 1890, vol. i, 478.

<sup>74</sup> Vol. i, p. 29.

<sup>75</sup> Vol. i, p. 28.

<sup>76</sup> *Loc. cit.*

<sup>77</sup> *Logic*, 287.

both of whom James acknowledges indebtedness, use the term familiarly, and function was a popular concept with the French physiologists with whose works James must have been acquainted.

It seems clear enough, then, in conclusion, that *phrenology is the matrix from which our term is derived*. For we have seen that Gall, Spurzheim, and the other phrenologists use the word very often in the psychological sense, as the equivalent of faculty. Brown, the first English philosopher to use the term in this way, must have got it from the phrenological atmosphere, and not from older English philosophers or from his philosophical contemporaries. Later psychologists who were unacquainted with the doctrines of phrenology seldom use the word, and when they do so it rarely occurs in the psychological sense. Psychologists familiar with phrenology, on the other hand, disciple and foe alike, when speaking of phrenology, use the term in the psychological sense. The usage becomes more and more popular; so that in certain cases 'mental functions' are referred to quite systematically, especially where phrenological leanings are prominent, as in the cases of Lewes and Bain. By the time of James, the term has come into general use.